THE REVIEW

DEVOTED TO THE INTERESTS OF THE AMERICAN SOCIETY FOR STEEL TREATING

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GOLDEN GATE MEN INVESTIGATE 18-8

T. D. Radcliffe Speaks at Meeting on Nov. 30

The talk given before the Golden Gate chapter on Nov. 30, was entitled "The Austenitic Chrome-Nickel Alloys." It was presented by Thomas D. Radcliffe.

The properties and field of application of the austenitic chrome-nickel alloys were discussed, some reference being made to the stainless chromium steels. The speaker observed that the limitations of the chromium stainless irons, due to air hardening and embrittlement under some conditions, showed a need for the more ductile and tough austenitic chrome-nickel steels. The use of chrome-nickel alloys, their very rapid increasing production, and gradual price reduction were noted.

Due to its high comparative cost it was stated that this metal must outlast steel ten times or more, which it commonly does. In services where 18-8, most common of the austenitic chrome-nickel alloys, is used the amount of steel displaced is tremendous. Savings result due to possible and continuous operation and long useful life. A large pressure vessel was recently advertised as having a corrosive resisting lining. If this was of 18-8 alloy veneer the corrosion resistant surface would probably be equivalent to well over 2" of steel. Whole pressure vessels have been made with walls of this alloy, but this is excessively expensive.

The properties and effect of the elements added to the alloy were discussed with particular reference to the effect of chromium, nickel, carbon, silicon, aluminum, tungsten, molybdenum and others. The physical properties of the 18-8 chrome-nickel alloys were discussed together with the effect of some of the elements upon them. The 18-8 alloy was described as of great value, as gaining increasing recognition, and as having a large future.

The structure of the 18% chrome—varying nickel alloys was shown by five constitutional diagrams drawn on glass and mounted in their relative positions. These were constructed by Mr. E. Brooker, and made an interesting and imposing model.

In conclusion it was observed that these alloys make possible bigger and better plants and more economical production which the ultimate consumer would benefit by, and which eventually would make the necessities of life easier to obtain and longer lasting.

LOS ANGELES SEES AN AIRCRAFT PLANT

Unusual December Meeting Is Popular With Members

By W. A. DeRidder

The December meeting of the Los Angeles chapter was in the nature of a plant visit to the Douglas Aircraft Co., at Santa Monica. This company manufactures airplanes for the U. S. Army and Navy, and work was in progress on all types of ships, from large multiple-motored amphibian bombers to small, fast pursuit jobs.

Over 125 members and guests went through the plant, under the capable supervision of guides furnished by the Douglas Company. Of particular interest was the welding of thin sections of both aluminum and steel, and also the use of dry ice to delay the age hardening of duralumin rivets. Duralumin will harden at room temperture within 30 minutes after annealing, and the use of "ice boxes" before riveting is necessary.

After the plant visit, the members and guests assembled for dinner at the Miramar Hotel, in Santa Monica. The dinner was followed by a talk by J. D. Weaver, project engineer for the Douglas Company, who was introduced by the technical chairman, Ed Fess. Mr. Weaver gave a detailed outline of the materials used in airplane manufacturing, covering steel tubing, forgings, aluminum castings, duralumin rivets, lumber, cloth and dope.

His address was of such interest to those present that the discussion and questions kept the speaker on his feet until after 11:00 P. M. After a vote of thanks to Mr. Weaver the meeting adjourned.

Recommended Practice Members Meet

OFFICERS FOR 1932 ASSUME NEW POSITIONS ON JAN. 1.

Committee List on Page 2

On Jan. 1, 1932, A. H. d'Arcambal, consulting metallurgist and sales manager of the Pratt & Whitney Co., Hartford, Conn., went into office as president of the American Society for Steel Treating. He was nominated at the annual meeting in Boston, September 21, 1931, and since no other nominations were received the Secretary later cast the ballot prescribed by the constitution which elected him to office.

By the same procedure, William B. Coleman, president of W. B. Coleman & Co., Philadelphia, assumed office as vice president and Arthur T. Clarage, president of Columbia Tool Steel Co., Chicago, as treasurer. New directors are Harry D. McKinney, vice-president of Driver-Harris Co., Harrison, N. J., and C. F. Pascoe, superintendent of Canadian Steel Foundries, Ltd., Montreal, P. Q. In addition to these men the 1932 Board of Directors includes J. M. Watson, president of the Society in 1931, two members of the 1931 Board whose terms have not expired—F. B. Drake, Johnson Gear Co., Berkeley, Calif., and B. F. Shepherd, Ingersoll-Rand Co., Phillipsburg, N. J.

President d'Arcambal has made several committee appointments to fill vacancies caused by the expiration of the present terms of a number of valuable workers in the A.S.S.T. The complete list of standing committees of the Society appears on page 2.

NICKEL CO. PROMOTES TWO

T. H. Wickenden and H. J. French, Both Well Known in A. S. S. T., Honored

Two promotions in the technical staff of The International Nickel Co., Inc., were announced recently.

T. H. Wickenden, since 1922 in charge of the company's development work in the automotive and aeronautical fields, has been appointed assistant manager of development and research. H. J. French, since 1929 a member of the research staff at its laboratory in Bayonne, N. J., has been transferred to the development and research department in New York to take charge of development work in steel.

CHICAGO MEN HEAR ARCHER ON DEC. 10

Aluminum Talk Liked by Crowd of 200 Present at Meeting

By Harry Hardwicke

There was the regular attendance of about two hundred at the Dec. 10 meeting of the Chicago chapter at the City Club of Chicago.

In the time allotted to a coffee talk, we were privileged to see a motion picture by B. A. Rogers and L. R. Van Wert of Harvard Engineering School. It was a most interesting film.

Our genial and efficient chairman, D. L. Colwell, then presented the technical chairman, Harvey A. Anderson, metallurgist, for Western Electric Co. Harvey needed no introduction to a Chicago A. S. S. T. meeting as he is one of our regulars. He came primed to tell us several things about aluminum that he had recently discovered.

He introduced the guest speaker of the evening, Robert S. Archer, director of metallurgy, A. O. Smith Corp., Milwaukee, who covered the subject of "Aluminum" from start to finish—raw materials and methods of producing; the scope of the aluminum industry; various forms and applications of aluminum and aluminum alloys; heat treatment of strong aluminum alloys and the part these play in aircraft construction.

Those of us who listened to Mr. Archer's pleasing talk at one of our Ladies' Nights about two years ago were glad of this opportunity to hear him again, His talk this evening was both interesting and instructive, as was evidenced by the lengthy discussion that followed.

To encourage the members to send in their dinner reservation cards promptly, the chairman stated that the person whose name appeared on a card drawn from the lot would be entitled to a free dinner. Ernest H. Noyes of Aluminum Co. of America did the drawing, and John Henley of Chicago Extruded Metals Co. was the lucky man. He had it coming to him as he had seven of his associates to dinner.

METALLURGISTS STUDY "METAL PROGRESS" ADVERTISEMENTS

Do metallurgists read the advertising columns of *Metal Progress?* They surely do—but let's examine the dope.

A publication of broad appeal to all members of the A.S.S.T., *Metal Progress*, rounds out the Society's publications so that every month each member receives a goodly amount of worth while, usable information. Speaking in round figures, members may be divided as follows:

25% Metallurgists and Chemists
25% Chief Executives
25% Works Managers, Superintendents
25% Engineers, Salesmen, Professors, Shopmen

Metal Progress was designed especially to serve the latter 75%, with the assumption that metallurgists were primarily interested in the technical articles appearing in *Transactions*.

This assumption was not entirely correct. Recently the 1655 metallurgists were asked by questionnaire "Do you observe and read the advertisements in *Metal Progress?*"

To date, 870 answers were returned—an excellent response. Tabulating the replies, 98.86% of the metallurgists read the advertisements. Only 9 (1.14%) said "no."

Overwhelmingly, the answer is "Yes! the metallurgists read advertising columns of *Metal Progress.*" And here are just a few of their voluntary comments. No effort was made to obtain these.

(I read *Metal Progress)* "as much or more than any metallurgical publication."

"There is as much education in *Metal Progress* ads as in the subject matter."

"Have made three sizable purchases as a result of advertisements in *Metal Progress.*"

"More than any other magazine on my desk, and I have six of them."

RECOMMENDED PRACTICE COMMITTEE HOLDS PRODUCTIVE 14 HOUR MEETING ON DEC. 11

Adopts Comprehensive Outline to be Followed in the Compilation of "National Metals Handbook"

On December 11, Chairman L. B. Case of the Recommended Practice Committee called his members into session for one of the best meetings the Committee has had, and without question the longest, as it did not adjourn until fourteen hours later.

Many important items pertaining to organization, committee policies, and sub-committee activities were discussed and considered. One important action taken by the Committee was the adoption of a comprehensive outline for the compilation of *National Metals Handbook*. This outline, prepared by R. S. Archer, a member of the Committee, bids to be of valuable assistance in a systematic and continuous plan for developing *Metals Handbook* more completely.

Because of the importance of the work before the Recommended Practice Committee, arrangements have been made to have at least two regular meetings each year. The first of these meetings will be in the spring and the second some time in the fall of each year.

Four new sub-committees of the Recommended Practice Committee are to be organized to prepare reports on (1) the Prevention of Corrosion by the use of Oils, Greases, and Slushes; (2) Machinability of Steel; (3) Carburizing with Gas; and (4) Properties and Testing of Hot and Cold Rolled Strip.

The Committee is planning to have prepared within the near future a Glossary of Terms used in the iron and steel industry; a compilation of trade names of corrosion and heat resisting metals; and a general article embracing all the important methods of hardness testing.

Although the next meeting of the Committee will not be held until next spring, the members have a very important program to fulfill before that time. Each member is reviewing *Metals Handbook* to determine what articles, practices or portions thereof need revising, and each member will report his findings to the Committee at the spring meeting. With this information the Committee will make definite plans for revising *Metals Handbook* and bringing it up to date.

The members of the Committee are as follows:—L. B. Case, Chairman, J. R. Adams, R. S. Archer, M. A. Grossmann, C. H. Herty, Jr., H. B. Knowlton, F. T. Llewellyn, W. J. Merten, P. C. Osterman, J. E. Donnellan, Secretary. All were present at the meeting but one member. Mr. Eisenman and Mr. d'Arcambal attended the meeting and the Committee was greatly assisted by their valuable experience and guidance.

If the membership could have seen how carefully and conscientiously each problem was discussed and considered, they would be proud of this important Committee of the A.S.S.T.

CINCINNATI HEARS TALK ON TANTALUM

F. C. Kelley Emphazises Use of Carbide for Tools

By N. C. Strohmenger

Our third regular meeting of the season, Dec. 3, was held at the Hotel Gibson and called to order by Chairman N. M. Salkover. Floyd C. Kelley of the General Electric Research Laboratory spoke on the subject of, "Tantalum, Its Uses and Properties." He made reference to cemented tantalum carbide tools.

Mr. Kelley briefly stated the experiments made on all the various combinations of cemented carbides possible from the elements shown in the Periodic Table. Cemented tantalum carbide is found to have qualities that surpass those of the cemented tungsten carbide type. He gave us an idea how the cemented tantalum carbide was made and bound together. Also the method used in brazing a tip of this carbide on its shank was described.

There were severe tests on straight cutting on S.A.E. 2330 steel of 195 Brinell hardness with less power being required to drive the machine, smoother finish and longer tool life obtained on the tantalum carbide tools than on the tungsten carbide tools. These differences of qualities on these tools were brought out more clearly by illustrations with slides of data tabulated and appearance of cutting edge as well as its adjoining surfaces.

So far practically all of the cutting tests have been made on machines in the laboratory where they have not been able to actually reach the maximum life that these tantalum tools will give. However, there is no doubt that these tools have great possibilities in industry and are better and cheaper for certain classes of work than are the present tools now on the market.

We had a very interesting and valuable discussion that made a lot of points about the subject better understood.

MILWAUKEE ENJOYS HARDER

Nitriding Address Pleases Enthusiastic Crowd at Dec. 21 Meeting

By R. N. Hurless

On Dec. 21, Dr. O. E. Harder, assistant director of Battelle Memorial Institute, Columbus, Ohio, addressed the Milwaukee chapter on nitriding steels. More than seventy-five members and guests attended the enthusiastic meeting which was held in the auditorium of the Milwaukee Gas and Light Co.

Dr. Harder's message was well received. He presented a well organized address in which he explained the various processes of nitriding steels and the methods of treating materials to be nitrided. Following the address many interesting questions and discussions were presented and were well explained by Dr. Harder.

CHAPTERS OFFERED AUTOGIRO FILM

The motion picture story of the autogiro, "Wings of Tomorrow," is available for projection before interested chapters of the society. Films are obtainable in either 35mm. or 16mm. size, the former having full sound accompaniment. Inquiries should be addressed to Autogiro Co. of America, Land Title Bldg., Philadelphia.

J. A. COMSTOCK TALKS TO 85 NORTHWEST MEN IN DECEMBER

Discusses Gas Carburizing

By A. C. Forsyth

J. A. Comstock spoke to a large audience at the December meeting of the Northwest chapter. The meeting was held at the Manufacturers' Association in Minneapolis and about 85 were in attendance. Mr. Comstock is metallurgist of the Peoples Gas Light and Coke Co. of Chicago.

Mr. Comstock first gave a brief outline of the history of carburization, emphasizing the changes that have taken place. He then discussed gas carburization in regard to the kinds of gases used, the equilibrium of the carburizing gases, the rate of flow, the time and the temperature. The speaker also discussed the effect of film on the surface of the work, the effect of moisture, the effect of catalysts, and the working pressure. To be successful in gas carburization the operator must be able to regulate these variables.

After presenting his paper, Mr. Comstock illustrated a number of points by the aid of lantern slides. The illustrations included a battery of carburizing furnaces, instruments for controlling the moisture in the gas and the rate of flow. Depth was shown to depend on time and temperature. Illustrations of normal and abnormal carburizing steels were also given.

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TO TRANSLATE A.S.S.T. BOOK

"Principles of the Heat Treatment of Steel," written by members of the U. S. Bureau of Standards and published a few years ago by the American Society for Steel Treating, has had a useful career in this country as a text and reference book.

Its sphere of popularity is now about to be extended abroad. M. Jean Munier, Paris, France, has requested permission of the Bureau and of this Society to translate the work into French for use in France and Belgium.

CANTON-MASSILON STUDIES DIRIGIBLE

Aeronautical Engineers Tell Chapter About U. S. S. Akron

By N. L. Deuble

W. C. Young, manager of aeronautics of the Goodyear Zeppelin Corp. assisted by S. H. Phillips, research engineer of the corporation addressed the Canton-Massillon chapter on "Airships and the U. S. S. Akron." Mr. Young has been in the aircraft industry for a number of years, flying a plane for the first time in 1913 and a dirigible in 1916.

After reviewing the mechanical advantages and construction of the Akron, he discussed the Navy's interest in such ships. This is primarily based upon the demonstration of airships during the World War in which it was shown that one dirigible could replace six scout cruisers. This estimate is based upon the experience of our Navy Department using an English dirigible during the war.

From this it is easy to see why the Navy would be interested in airships; one cruiser costs in the neighborhood of $18,000,000.00 and requires 550 men and 50 officers to man. If an airship replaces six cruisers and costs in the neighborhood of $3,000,000.00, being manned by 50 men and 15 officers, it is easy to see the great saving possible.

At the time the Navy Department made their trial tests of the Akron there was considerable discussion in regard to the overweight and under speed of this ship. The overweight statements were based on the original estimated weight and since many changes had been made in the craft since the original estimates were made, it can easily be seen that the weight could not be held down to the original figures. Such instances as the following were cited:

A three burner stove was estimated to weigh approximately fifty pounds. After the ship was started it was decided that a four or five plate stove was necessary. It was impossible for the stove manufacturer to bring this weight down to fifty pounds. In other cases where four or six bunks were originally figured, it was changed to eight or ten. An accumulation of such items would naturally increase the weight of the ship.

In regard to the speed requirements, there were no known propellers satisfactory for this ship and it was therefore necessary to design propellers. The first set was greatly under speed and it was necessary to make a second. The second set, which is now on the ship, came within ten knots of producing the required speed. A third set is now being made which will undoubtedly bring the speed up to the Navy's requirements.

Two films were shown which were taken during the process of construction of the U. S. S. Akron. After these were shown Mr. S. H. Phillips answered a great many questions in regard to the mechanical construction and also questions regarding the handling of the ship, which were answered.

SCHENECTADY HEARS NEMSER

Movies and Slides Illustrate Talk on High Speed Steel Hardening

By F. C. Kelley

D. A. Nemser, chief metallurgist of Pratt and Whitney Co. was the guest speaker of the Schenectady chapter at its meeting on Dec. 15. He gave a very interesting and practical talk on "High Speed Steel Hardening." The talk was illustrated by lantern slides and moving pictures.

Mr. Nemser brought out the importance of structure of the forged and rolled steels used upon the final tools. The heat treatment of such steels is also just as important, and to obtain the best grade of high speed steel tools it is essential that they should receive a high temperature draw. Many favorable comments were received from the practical metallurgists.

CLEVELAND ENGINEERS 96% EMPLOYED, SURVEY SHOWS

3% of A.S.S.T. Men Unemployed

Recently in Cleveland a joint committee of the local sections of 15 national engineering societies was organized for the purpose of relieving unemployment among engineers and scientifically trained men. One of the first actions of this committee was to direct a questionnaire to its membership to ascertain the extent of unemployment in each group represented. In a total circularization of 4600 in greater Cleveland there was a response from 170 persons, indicating that they were unemployed. This number represents a gross of 3.7% in the Cleveland area of members of engineering societies in need of employment. Three groups found no unemployment among their members.

It is an interesting fact that there were only 11 persons (3%) of the members of the Cleveland chapter of the American Society for Steel Treating out of employment. Subsequent to receiving these names one person has been placed in a responsible, permanent position.

Since the formation of this joint committee about Dec. 10, 1931, there has been much constructive effort made in formulating methods of organization so that the combined efforts of all cooperating groups may have the most effective results in keeping men employed and gaining employment for those not working.

The Ohio State committee of the American Engineering Council on unemployment as well as the Gifford committee are co-operating to the fullest extent.

NEW HAVEN ENJOYS HOMERBERG DEC. 17

Talk on Nitriding Features Chapter's Christmas Party

By R. T. Porter

The New Haven chapter held its regular monthly meeting and Christmas party on Dec. 17, in the auditorium of the Chase Companies, Inc., Waterbury.

A very lively dinner party was held in the Waterbury Hotel preceding the meeting, at which Mr. Jarvis, manager of the personnel department of the Chase Companies, gave a very interesting talk on the personnel work.

The technical meeting was opened with a few remarks by our National President, Mr. d'Arcambal, on the activities of the Society. We were congratulated by the speaker for fostering Executives' Night. Letters had been sent to executives of the various concerns inviting them to be present. Many accepted the invitation and those who could not attend sent someone in their place.

Dr. V. O. Homerberg, technical director of the Nitralloy Corp. was the guest speaker. He covered the following points: 1. Brief review of subject; 2. Discussion of furnaces and containers; 3. Nitriding of special alloy tools; 4. Nitriding of cast iron; 5. Machining of Nitralloy; 6. Welding of Nitralloy; 7. Wear resistance; 8. Concrete examples with data pertaining to interesting applications, both in this country and abroad.

The lecture was fuly illustrated by slides; it was of a practical nature and was expressed in terms which were readily understood by all members.

Approximately 40 prizes were given away following the meeting. This was our method of celebrating the Christmas season. Prizes were donated by the chapter, members of the executive committee and companies holding sustaining memberships. A good time was had by all.

NEW YORK HEARS J. H. HALL

Alloy Steels of the Manganese and Stainless Types are Described

By John J. Crowe

On Dec. 14, 50 members of the New York chapter had a very delightful meal after which they adjourned to the Merchant's Assembly Room and their number augumented by sixty others listened to an excellent talk by John Howe Hall of the Taylor Wharton Iron and Steel Co. on "Production, Heat Treatment and Application of Cast Alloy Steels of the Alloyed Manganese and Stainless Steel Types."

Mr. Hall not only covered the main difficulties encountered in the manufacture of the manganese steels of the Hadfield type and the austenitic steels of the chrome-nickel type but gave much valuable information on the proper application of various steels.

Following Mr. Hall's talk which lasted an hour and a half, there was a lively discussion which lasted for something over an hour.

Coming Events of the Chapters

Boston—H. E. Handy, Secretary, Saco-Lowell Shops, Biddeford, Me.
Feb. 5—Practical Forging and Forging Problems ..... J. R. Adams
Mar. 4—Iron Castings and Their Heat Treatment ..... Oliver Smalley
Apr. 8—X-Ray Testing of Metals—Joint Meeting at Providence .....
May 6—Timbre of Tool Steel—B. F. Shepherd

Buffalo—Clyde Llewellyn, Secretary, Bliss & Laughlin Co.
Jan. 14—Metallography .....
Feb. 11—Nitriding ..... Robert Sergeson
Mar. 10—Steel Making ..... C. H. Herty, Jr.
Apr. 14—Forgings .....
May 12—Annual Banquet, Entertainment....

Cincinnati—N. C. Strohmenger, Secretary, Tool Steel Gear & Pinion Co.
Feb. 10—Heat Treating Stainless Steels..... C. A. Scharschu
Mar. 10—Metallurgical Control with a Minimum of Expensive Equipment... E. E. Thum
Apr. 7—The Cutting of Metals..... A. H. d'Arcambal
May 5—Welding .....

Cleveland—H. B. Pulsifer, Secretary, Ferry Cap & Set Screw Co., Scranton Rd., Cleveland.
Feb. 1—Nickel and Its Industrial Applications ..... T. H. Wickenden
Mar. 7—Flow of Metals..... A. M. Steever
Apr. 4—Future of Metallurgy... O. E. Harder
May 2—Methods for Testing of Various Properties—Plant visitation, National Tube Co., Lorain, Ohio .....

Detroit—Gordon Webb, Secretary, Ryan, Scully & Co., Room 410, Donovan Bldg., Detroit.
Feb. 8—Forgings and Forging Failures..... A. M. Steever
Mar. 14—Testing ..... J. A. Capp
Apr. 11—Alloying Elements and Grain Size in Steels ..... M. A. Grossmann
May—Open Date

Hartford—L. H. Knapp, Secretary, Hartford Electric Light Co., Hartford.
Feb. 9—Metallurgical Application of Gas..... E. D. Milener
Mar. 8—Surface Hardening Steel—H. E. Koch
Apr. 12—High Pressure Vessels.... E. R. Fish
May 10—Slushing Compounds and Their Use.. ..... E. N. Converse
June 14—Thirteenth Annual Banquet

Indianapolis—Arthur E. Focke, Secretary, Diamond Chain Co., Indianapolis.
Feb. 8—Talk on Meehanite .....
Mar. 7—Corrosion and Heat Resisting Steels.. ..... T. Holland Nelson
Apr. 5—Machinability of Metals ..... A. H. d'Arcambal

Lehigh Valley—Professor L. F. Witmer, Secretary, Lafayette College, Easton, Pa.
Feb. 5—The Use of Gamma Rays in Non-Destructive Testing ..... R. F. Mehl
Mar. 4—Tool Steels ..... J. P. Gill
Apr. 1—Cold Heading ..... C. L. Harvey
May 6—Stainless Steel ..... Howard Stagg
May—Group Chapter Meeting—detailed announcements later.

New Haven—R. T. Porter, Secretary, Heppenstall Forge Co., Bridgeport, Conn.
Jan. 21—Correct Hardening .... Jordan Korp

Ontario—J. F. Fitzpatrick, Secretary, Flexible Shaft Co., Ltd., Toronto.
Feb. 5—Aluminum Bronze ..... Jerome Strauss (At Toronto)
Mar. 4—Fuels and Furnaces.... (At Hamilton)
Apr. 8—Effect of Furnace Atmospheres..... Sam Tour (At Toronto)
May 6—High Speed Steel..... O. W. Ellis (At Hamilton)

Philadelphia—A. O. Schaefer, Secretary, Midvale Company, Nicetown, Philadelphia.
Jan. 29—To be announced later.....
Feb. 26—High Speed Steel and Tungsten Carbide ..... G. J. Comstock
Mar. 25—Open Meeting
Apr. 29—Nitriding ..... V. O. Homerberg
May 27—Plant Visit

Pittsburgh—H. L. Walker, Secretary, Box 521, N. S. Station, Pittsburgh.
Jan. 14—Magnetic Materials.... T. D. Yensen
Feb. 11—Certain Practical Applications of X-Rays ..... R. F. Mehl
Mar. 10—Commercial Heat Treating..... A. M. Cox
Apr. 14—Heat Treatable Brasses..... W. F. Graham
May 12—Aircraft Engine Materials..... H. J. Fishbeck
June—Annual Outing—Announcement Later

Schenectady—Floyd C. Kelley, Secretary, General Electric Co.
Jan. 19—Fish Scale in Finishing Steel..... Sam Tour
Feb. 23—Recent Structural and Alloy Steels.. ..... A. B. Kinzel
Mar. 15—Non Destructive Testing..... A. V. de Forest
Apr. 19—Heat Treating..... Jordan Korp
May 17..... B. L. Newkirk

Southern Tier—W. S. Bennett, Secretary, Elmira Water, Lt. & R. R. Co., Elmira, N. Y.
Jan. 18—..... Waverly, N. Y.
Feb. 15—..... Waverly, N. Y.
Mar. 21—..... Elmira, N. Y.
Apr. 18—..... Endicott, N. Y.
May 16—..... Elmira, N. Y.

Springfield—Thomas Jones, Secretary, Chapman Valve & Mfg. Co., Indian Orchard, Mass.
Jan. 18—Welding..... J. R. Dawson

Tri-City—Robert H. Lind, Secretary, Peoples Light Co., Davenport, Iowa.
Feb. 2—X-Ray as Used in Industrial Work... ..... W. G. Praed
Mar. 1—Welding and Cutting—Elkonite and Carboloy ..... G. N. Sieger
Apr. 5—Continuous Nitriding and Gas Carburization ..... R. J. Cowan
May 3—Selection of Heat Treating Equipment ..... C. H. Martin

Washington—S. J. Rosenberg, Secretary, U. S. Bureau of Standards, Washington, D. C.
Feb. 19—Magnesium and its Alloys..... J. A. Gann
Mar. 18.—Manufacture and Uses of Metal Foils .....
Apr. 15—Manufacture and Heat Treatment of Springs .....
May—Meeting in conjunction with annual meeting of the Bureau of Standards Metallurgical Advisory Committee.

Worcester—Theodore Packard, Secretary, American Steel and Wire Co., Worcester, Mass.
Feb. 10—Testing of Metals and Wire..... E. E. Thum
Mar. 24—Tool Steel Failures and the Latest Developments in Nitriding.. V. O. Homerberg
Apr. 10—Speaker and subject to be announced later. Joint meeting with the Springfield Chapter.
May—Speaker and subject to be announced later—Annual Meeting.

York—Charles M. Strickler, Secretary, General Machine Works.
Jan. 13—Machine Forgings ..... J. H. Friedman (at York)
Feb. 9—Furnace Atmospheres ..... R. G. Guthrie (at York)
Mar. 25—Structural Shapes ..... G. A. Richardson
Joint meeting with Engineering Society of York (at York)
Apr. 13—Quality Practice in the Open Hearth ..... V. H. Lawrence (at Harrisburg)
May—Chapter night .....

C. H. PROCTOR RETIRES FROM R. & H.

Charles H. Proctor, for almost 20 years electroplating specialist of the Roessler & Hasslacher Chemical Co., Inc., New York, has retired from active service duty to devote his time to special work for the company, chiefly to assist in training salesmen and also to act as a consultant on plating.

CLEVELAND JOINS S. A. E. ON DEC. 14

Gas and Electric Welding Talks Make Good Meeting

By H. B. Pulsifer

The Cleveland Section of the S.A.E. invited the Cleveland chapter of the A.S.S.T. to a joint meeting on the "Joining of Metals" (high-brow for welding) on Dec. 14.

Nearly 60 members of the two organizations gathered for a dinner at the Cleveland Club and later about a hundred more entered to hear the speaking.

D. S. Cole of the S.A.E. presided at the meeting but turned the introducing over to W. E. Benninghoff of the A.S.S.T.

The first speaker, L. D. Meeker of the General Electric Co., gave an excellent account of welding as practiced by that company. Since General Electric uses welding in an exceptionally large way, both as to types of methods and variety of objects, the discourse was highly instructive. Mr. Meeker's familiarity with the welding work in all of the great plants of General Electric was as evident as his intimate knowledge of welding details. He is an excellent speaker and an hour passed quickly as the audience acquired an up-to-date picture of this phase of the metal industry.

The second speaker was W. Walker of the Linde Air Products Co. He presented two films on the latest technique of acetylene welding as used on the overland pipe lines. Mr. Walker is also a fluent speaker and explained the films clearly. The film close-ups of the melting electrode, the puddle of molten steel and protecting scum were surprisingly plain.

Both men are cordially recommended to other chapters of the Society.

YORK VISITS SILK MILLS; HEARS TALK

"Aluminum" is Topic Chosen by L. W. Kempf, Dec. 9

By Arthur W. F. Green

The December 9th meeting of the York chapter was held in Lancaster, Pa., and was in the nature of a combined plant visitation followed by a technical discussion.

The plant visitation was unique in that the chapter and its friends and guests were invited to go through the Stelhi Silk Mills Plants in Lancaster. A group of more than thirty was ushered through this large plant. We saw the manufacture of silk cloth from the raw material as received from Japan to the finished cloth in many and varied designs.

Following the plant visitation a dinner was served to forty-five at the Stevens House in Lancaster. After dinner a very interesting talk was presented by S. E. Conybeare, who is in charge of Plant and Product Development and Research at the Armstrong Cork Co., Lancaster, Pa.

We also appreciated and thank the Armstrong Cork Co. for their cooperation in designing the meeting follow-up notice which was a printed form on aluminum paper designed by their Advertising Department.

When the meeting proper was called to order there were approximately 70 present to hear a talk by L. W. Kempf of Research Laboratories, Aluminum Company of America, Cleveland, on the subject "Aluminum and Its Alloys." Just prior to the introduction of Mr. Kempf, there were presented some facts regarding the educational work being carried on by the chapter. Mr. Green advised the chapter that the class of sixteen, being conducted at the Y.M.C.A. in York, was apparently progressing very satisfactorily, while the class in Harrisburg started on Dec. 7 with an enrollment of more than fifty. This is a very encouraging condition and particularly gratifying because it heralds a decided step forward in the activities of this young chapter.

Mr. Kempf was introduced to the meeting by an old friend and associate, Mr. Ekholm, metallurgist of the Harrisburg Pipe & Pipe Bending Co. The talk was presented in a very informal way, without the use of notes but with very beautiful, illustrative, lantern slides. Mr. Kempf divided the aluminum alloys into two groups, one using the alloys of copper, silicon and iron and the other those made from the magnesium and other metals. He showed, by the very splendid use of simple equilibrium diagrams, the effects of the various alloying agents on the structures of the aluminum alloys, thus clearly introducing each phase of his subject and making it possible for everyone present to follow the development of each type of alloy. A fine discussion followed.

ONTARIO STUDIES DATA ON SPRINGS

R. W. Cook Covers Design, Manufacture and Use

By Jno. W. McBean

The Ontario chapter held its December meeting in the Royal York Hotel, Toronto. About 100 people enjoyed the dinner and another score came in for the program.

After a short musical selection and a coffee talk by the Australian Trade Commissioner, R. W. Cook, vice-president of the Wallace Barnes Co. gave a most informative and interesting talk on "Design, Manufacture and Use of Springs."

In many springs the steels are worked at extremely high unit stresses and this is only possible due to the very high physical properties imparted by the two principal processes of manufacture of the wire or strip.

In the hard process, such as used for music wire, the rods are heat treated to produce a rather coarse grain and a sorbitic structure. The wire is then cold drawn and the heat treatment and cold drawing are alternated till the final size is reached. This produces a very high tensile combined with great toughness and high elastic limit. This is called the hard process. In clock spring material the rods are given a low anneal to completely spheroidize the carbides and then cold rolled, annealing and rolling being alternated till the final size is reached. Afterward the steel is hardened and tempered. This is known as the soft process.

The sorbitizing of the steel also enables a remarkable amount of sharp bending to be done on high carbon steels and even drawing operations.

Owing to the fact that Young's Modulus is substantially the same for all varieties of steel, even a low carbon steel could give similar results to the high carbon steels if the range of motion and the unit stress were kept low, but the use of the materials especially processed as above, makes it possible to get a very large range of motion and maximum load with a small volume of metal and in a small space.

A great deal of work has been done on the endurance limits of the steels used and this has assisted in making a science out of the design of springs. The tolerances imposed by the working conditions and specifications are surprisingly close, sometimes less than 1/1000 of an inch in diameter of the wire.

Great interest was shown in the questionnaire which followed and in examining the specimens Mr. Cook had brought.

BUFFALO MEN HEAR KRIVOBOK DEC. 10

Investigation of Metals is Theme of Fine Talk

By Clyde Llewelyn

The fourth regular meeting of the Buffalo chapter for the 1931-1932 season was held Dec. 10. Dinner was served to 21 and there were 64 present at the regular meeting which followed.

Chairman J. H. Birdsong introduced the speaker of the evening, Prof. V. N. Krivobok, of the Carnegie Institute of Technology, Pittsburgh, whose subject was "Methods of Investigation as Applied to the Science of Metals."

Dr. Krivobok delivered one of his usual dynamic, interesting and thoroughly enjoyable talks on the above subject, during which he outlined numerous methods of investigation for the determination of quality and composition and for locating and identifying the different kinds of defects, inclusions, etc., in metals. Some of these methods have regularly been in use for a good many years, while others are comparatively new and they included chemical analyses of various kinds, thermal analysis, dilatometric analysis, tests for electrical conductivity, electrical resistivity, magnetic properties, tensile, bend, torsion, impact, creep, fatigue and torsion-impact testing, microscopic analysis, deep etching for macroscopic examination and metallographic, spectroscopic, stethoscopic and X-ray examinations. The address was supplemented with some very appropriate slides, showing different methods of testing and defects which had been brought to light by means of certain methods of investigation.

Before adjournment, it was moved by Chairman John Birdsong, seconded by Clyde Llewelyn and unamimously passed, that Prof. Krivobok be made an honorary member of the Buffalo chapter, not subject to any dues or assessments. This action established a precedent for the Buffalo chapter and Prof. Krivobok responded with a very warm talk of appreciation.

H. W. McQUAID TALKS ON CASE HARDENING TO 100 AT BOSTON

Dr. H. H. Lester Gives Coffee Talk

By Howard E. Handy

H. W. McQuaid, chief metallurgist of the Timken-Detroit Axle Co., Detroit, was the guest speaker at the meeting of the Boston chapter, held at Massachusetts Institute of Technology on Dec. 4.

Taking as his subject "Case Hardening and Nitriding," Mr. McQuaid discussed in particular the manufacture of gears used in the automotive industry and described in detail the materials used for, and the heat treatment applied to, these parts. Fine grain and coarse grain steels, so called, were discussed at considerable length and it was these subjects to which most of the hour's discussion which followed the presentation was confined. More than 100 were in attendance.

A family-style dinner was served in Walker Memorial, there being about 70 members and guests present. The coffee talk was given by Dr. H. H. Lester, metallurgist at the Watertown Arsenal and a member of the Boston chapter.

His talk was entitled "The X-Ray as Applied to the Testing of Metals" and was devoted almost wholly to the examination of electric arc welds by means of the X-Ray. Many slides which the speaker had prepared at Watertown Arsenal during several years of research work showed clearly the remarkable improvements which have been made possible in such welding by application of X-Ray testing.

SOUTHERN TIER HAS GOOD DEC. MEETING

Prof. Upton Tells Effect of Heat Treatments on Steel

By W. S. Bennett

The Southern Tier chapter held its regular monthly meeting at the Hotel Frederick at Endicott on Dec. 14.

The speaker of the evening was Professor G. B. Upton of Cornell University who talked on the subject of "What Goes on Inside in the Heat Treatment of Steel." Professor Upton had a number of charts indicating the effect of rate of cooling on steels of varying carbon content. He pointed out that the reaction of martensite in addition to taking place at a lower temperature than that for the formation of pearlite was often considerably more rapid. Thus while in quenching a heated steel speciman it was possible to pass through the reaction range for the formation of pearlite so rapidly that little or no pearlite would be formed, it was impossible to accomplish this with martensite due to the speed with which the reaction took place.

Professor Upton gave his reasons for maintaining that martensite was weakly magnetic or non-magnetic and that if it were possible to obtain martensite entirely free from other forms of steel that the hardness of such a piece would probably range in the neighborhood of 1400 Brinell.

In addition to many other charts Professor Upton had one which showed the rate of cooling of the inside and the outside of a piece of steel when quenched. At the outset of the quench, both center and surface of the steel are at the furnace temperature and upon immersion in the quenching bath the outside surface falls very rapidly at first, while the center remains almost unchanged. The temperature in the center begins to drop very rapidly at the same time that the temperature drop of the outside surface slows up materially. In other words if the time and temperature curves of the outside surface and the center of the piece of steel are plotted on the same sheet the hump in each curve occurs at exactly the same time.

Professor Upton showed himself to be thoroughly abreast of new developments in the realm of heat treatment.

DETROIT MEETS SOCIALLY

Almost 300 Attend Dinner and Enjoy Entertainment Sponsored by Chapter

By O. W. McMullan

A record turnout of nearly 300 members and guests was registered at the December meeting of the Detroit chapter. The meeting, which was social in nature, was held at the Hotel Fort Shelby. The dinner was followed by an entertainment and drawing for numerous prizes. Any thoughts of a depression were apparently forgotten by the enthusiastic crowd.

Among those present were National President J. M. (Mike) Watson, President-Elect A. H. d'Arcambal, and the first President, Prof. A. E. White, all of whom spoke a few words. The old timers, or members of the Steel Treating Research Society, were again guests of the chapter. Bill Woodside, our founder member, gave us a few more of his reminiscences of the early days.

SCHENECTADY LIKES TALK ON MALLEABLE

Enrique Touceda's Talk Covers Malleable Iron Metallurgy

By F. C. Kelley

The Schenectady chapter had the pleasure, on Nov. 17, of hearing Enrique Touceda, consulting metallurgist and head of the Touceda Research Laboratories, speak on malleable iron.

The lecture was illustrated by slides and many interesting points brought out. The cast iron for malleableizing should contain the correct amount of silicon and carbon so that when melted all of the carbon is in solution. A hard casting is desirable. Samples of the cast iron are taken at half hour intervals and fractured. The character of the fracture reveals the condition of the iron and determines when it is ready to cast.

The castings are packed in inert material like sand or crushed brick and heated to a temperature of 1550°-1600° F. At 1600° F. the cementite breaks down. The heating time is 35-40 hours. Then the temperature is lowered very slowly and held just under the critical range for twenty-five to thirty hours.

Temper carbon and primary graphite has caused more trouble in malleable iron than any other one thing due to the fact that the right kind of iron was not used at the start.

Sand in the surface causes porosity which results in hardness at these spots due to incomplete breakdown of cementite.

When the castings are poured at too low a temperature blow holes are formed and hardness is the result. If the iron, when malleableized, is not held long enough just under the range pearlite and frames are the result.

Malleable iron cannot be welded because it has to be heated above the critical range and solution of carbon results causing hardness. It can be punched like sheet material and resists corrosion better than cast iron. It has been used very successfully for guard rails and shows no corrosion over long periods of time.

The tensile strength of the material is about 54,000 pounds per square inch with an elongation of 18% and has a high yield point. No alloying has been found which benefits malleable iron.

W. H. Eisenman, secretary of the Society, was also present at this meeting and gave a talk on the condition of the Society. His presence and address put new life into the group and a very pleasant evening was enjoyed by all.

WILSON-MAEULEN PYROMETER DIVISION JOINS FOXBORO CO.

Offices Moved To Foxboro, Mass.

The pyrometer division of Wilson-Maeulen Co., Inc., has merged with the Foxboro Co. This action has followed 25 years of cooperation between the two companies. The entire personnel of the pyrometer division of Wilson-Maeulen Co. will be merged with that of the Foxboro Co. It is felt that this combining of the knowledge and experience of these two organizations will prove an important step in the progress of this industry.

The Wilson-Maeulen Co. specializes in the manufacture of electric indicating, recording and controlling pyrometers and electric resistance thermometers for temperatures up to 3600° F. Thus, by including the outstanding Wilson-Maeulen temperature instruments, the Foxboro Co. can now offer a complete range of instruments of standardized quality.

Rockwell hardness testers, manufactured by the Wilson-Maeulen Co., will hereafter be built and sold by the Wilson Mechanical Instrument Co. which succeeds the mechanical instrument division of Wilson-Maeulen Co., Inc., and continues in the same factory and offices at 383 Concord Ave., New York City.

The Wilson-Maeulen pyrometers and controllers will be built in the modern, excellently equipped factories at Foxboro. All communications relative to pyrometers should be addressed to Wilson-Maeulen pyrometer division, the Foxboro Co., Foxboro, Mass.

NEW JERSEY GIVES COURSE IN METALLURGY FREE TO MEMBERS

First Lecture on Jan. 14

New Jersey chapter is offering an elementary course in fundamental metallurgy free of charge to members of the Society. The classes start Jan. 14 at the Essex County Vocational School, Sussex Ave., at First St., Newark, N. J., and will continue on subsequent Thursdays at 7:45 P.M. until February 25.

Capable and experienced men have agreed to give their time to the various lectures. E. L. Roff is chairman of the chapter's educational committee. The seven lectures to be presented will cover these topics:

Jan. 14—"Equilibrium Diagrams in General." A general discussion of a few simple types occurring in metallurgy.

Jan. 21—"Iron-Cementite Diagram." Fundamental to the understanding of heat-treatments, working and properties of steel.

Jan. 28—"Significance of Diagrams."

Feb. 4—"Microstructure of Steel"—as related to the iron-carbon equilibrium diagram.

Feb. 11—"Microstructure of Steel"—(continued). An elementary discussion of the fundamental microstructural constituents of steel, their nature, combinations and properties.

Feb. 18—"Case Carburization." Description of carburization and heat treatment of low carbon steels. Discussion of effect of normal and abnormal steel.

Feb. 25—"Steel Failures." A discussion of the causes of failures in steel parts.

FAILURES IN STEEL BALTIMORE'S TOPIC

Emil Gathmann Addresses Meeting on Dec. 28

By S. Procter Rodgers

In spite of the many other attractions coincident with the holiday season, the meeting of the Baltimore group on Dec. 28 was rather well attended. The subject, "Failures in Steel," is very broad and difficult to present in a short talk, but Emil Gathmann, who is president of the Gathmann Engineering Co., could call on such a wealth of experiences in the steel industry that he was able to illuminate the subject so that the essential facts stood out from the maze of causes and effects. His personal experiences also increased the interest aroused in the audience so that numerous questions were asked.

A large proportion of the defects in steel products arise from improper heat treatment or faulty methods of fabrication. Probably an equal proportion, however, of these defects can be traced to some imperfection in the ingot. It was with this, the casting phase, of steel manufacture that Mr. Gathmann's talk was particularly concerned.

He stated that the principal defects were pipes, blow holes, segregation, cleavage planes and ingotism. If any of these defects occur in the ingot they will be almost certain to appear in the fabricated product.

Piping need no longer be a factor, for with proper mold design it can be entirely eliminated. Blow holes, too, can be so controlled that they will usually not give trouble in the finished product. Segregation and cleavage plane defects, however, are more difficult to eliminate, but there is a possibility that they, too, can be controlled by more careful and intelligent mold design. Most of the manufacturers of quality steels have already given careful attention to special molds and methods of molding.

The first meeting of 1932 will be held on the last Monday in January, which is the 25th, at the Engineers Club.

F. S. JORDAN DIED DEC. 16

Frederick Samuel Jordan, for the past thirty years an outstanding figure in the nickel industry, died Dec. 16 in his sixty-third year. He was sales manager of the nickel department of the International Nickel Co., Inc.

ROCKFORD'S THREE MEETINGS POPULAR

X-Rays, Engineering, Furnaces Covered by Speakers

By L. J. Strohmeyer

The first fall meeting of the Rockford chapter was held Oct. 14. After the regular business meeting, W. G. Praed of the Claud S. Gordon Co. gave a very interesting talk on "X-Ray as an Aid to Industry."

Mr. Praed briefly explained X-Rays. He also mentioned and illustrated some of the present applications in both the commercial and industrial field and gave some very interesting data on results obtainable.

A lively discussion followed in which some very interesting points were brought out.

The November meeting was held in joint session with the Rock River Valley chapter of the American Society of Mechanical Engineers and the Rockford Engineering Society. The occasion for this joint meeting was the presence of R. W. Wright, national president of the A. S. M. E. The subject of Mr. Wright's address was "The Engineer's Opportunity."

He outlined some of the work which is being done to encourage the young engineer and stressed the necessity of all engineering societies going into this carefully in their localities. He also described in some detail some of the museums in Germany and France in which various works of engineering are displayed and explained the part they play in the education of the student engineer. He also mentioned that such a museum is being started on a small scale in this country.

After his talk a round-table discussion was started and a number of suggestions were made as a means for the advancement of engineering progress.

The speaker for the December meeting was W. A. Timm, development engineer in charge of heat treatment and use of magnetic metals at the Hawthorne Works of the Western Electric Co. in Chicago.

Mr. Timm discussed "Various Heat-Treating Furnaces used in the Manufacture of Telephone Equipment." While he specifically covered the furnaces used in the Hawthorne Plant, it was very interesting and helpful since there are, of course, similar furnace applications in other fields.

He also described in some detail some of the special furnaces which they have designed and which are especially adapted to their work. Mr. Timm presented slides showing the various furnaces and explained some of the construction details.

INDIANAPOLIS HEARS FRENCH

"Quenching of Steels" is Speaker's Subject at December Meeting

By A. E. Focke

For the December meeting, it was the privilege of the Indianapolis chapter to listen to a talk on the "Quenching of Steels" by H. J. French of the International Nickel Co.

Mr. French presented data taken from the work he did at the United States Bureau of Standards and at the Research Laboratories of the International Nickel Co. Mr. French discussed his data with specific reference to the obtaining of maximum hardness in various quenching media.

Mr. French's complete knowledge of his subject and pleasing method of presentation made his talk extremely pleasant and instructive.

As an additional feature, the film was presented showing the behavior of metals at high temperatures which was prepared by Bruce A. Rogers and Leland R. VanWert at the Harvard Engineering School.

Employment Service Bureau

Address answers care of A. S. S. T., 7016 Euclid Ave., Cleveland, unless otherwise stated

POSITIONS WANTED

CHEMIST and METALLURGIST: Desires a position of responsibility. Wide experience in chemical analysis, metallurgy, metallography, heat treatment and engineering specifications for steels, cast irons, nonferrous and aluminum alloys and lubricating oils. Also analysis for control of electroplating solutions for copper, nickel and chromium. Has been chief chemist and metallurgist with a leading automobile manufacturing company for 25 years. Address 1-5.

PRACTICAL HEAT TREATER: Fully capable of taking charge of any heat treating department. Would like position with progressive firm. Details on request. Address 1-10.

METALLURGIST: College graduate with ten years experience in research and development work. Thoroughly familiar with practically all types of physical testing, and handling of materials in all stages from simple inspection to the investigation of failures. Experienced with tool steels, stainless steels, nitriding, etc. Will accept position as assistant metallurgist or metallurgist at reasonable salary. Address 1-25.

JERSEYMEN FEATURE AUTOS IN DECEMBER

J. L. McCloud Discusses Steels Used in Modern Cars

By J. Sammon

A total of 165 members and guests were present at the New Jersey chapter meeting held Dec. 1 in Newark.

The Brown Instrument Co., Philadelphia, had an exhibit of recording instruments and pyrometers, and several of their engineers were present and explained the features and principles of these instruments. Through the courtesy of General Motors Corp. a movie entitled "Power Within" was shown. This picture shows how internal combustion engines function.

J. L. McCloud, metallurgical engineer, in charge of the chemical and metallurgical department of the engineering laboratory, Ford Motor Co., Dearborn, Mich., was the speaker of the evening, his subject being "Automotive Steels."

Mr. McCloud illustrated his talk with slides showing charts of the many grades of steels they use, in the making of Ford and Lincoln cars, and explained why certain analyses of steel were used for such parts as driving gears, crankshafts, cam shafts, spring leaves, etc., the heat treatment they are subjected to, accompanied by slides showing the furnaces in which the work is treated and explaining each operation in complete detail.

Mr. McCloud's talk was so thoroughly enjoyable, in that he presented his subject in such a manner that it was clearly understood by all, and Chairman Wyzalek's suggestion that we give a rising vote of thanks to the speaker and his company for giving our chapter the opportunity of hearing such a splendid talk was received enthusiastically.

BAUSCH & LOMB OFFER BOOK

Bausch and Lomb Optical Co., Rochester, N. Y., has published "Optical Instruments for Examining and Analysing Metals," an optical handbook for the metallographer. It includes articles, tables and references and a catalog of Bausch and Lomb instruments. It starts with a preface by W. L. Patterson and contains essential information for the metallographer, including a discussion of ultra-violet photomicrography and an article on spectrographic equipment.

The book is very attractively designed and laid out. Copies will be sent free to anyone whose request is made on company stationery.

BRIDGE WIRE MANUFACTURE IS OUTLINED TO WASHINGTON MEN

Dr. H. C. Boynton Speaks Dec. 15

By W. R. Angell

The third monthly meeting of the Washington chapter of the A.S.S.T. was held Dec. 15, in the auditorium of the new Interior Building. This was held as a joint meeting with the Washington section of the American Society of Mechanical Engineers and a record crowd was in attendance. After the usual dinner in honor of the speaker, the members and guests journeyed to the auditorium where a large crowd was already waiting.

The speaker of the evening, Dr. H. C. Boynton, metallurgist, John A. Roeblings' Sons, had for his topic, "Manufacture of Bridge Wire for George Washington Memorial Bridge." His talk was supplemented with several reels of motion pictures showing the manufacture and treatment of the bridge wire and also the important operations in the erection of the bridge.

The new George Washington Memorial Bridge is the last word in suspension bridges and has recently been opened to traffic. This great bridge is 4,760 feet long, has a single main span of 3,500 feet, and is suspended from four cables, each thirty-six inches in diameter, and all together carrying 107,000 miles of wire. A very remarkable engineering achievement completed in record time.

For nearly an hour after the picture, Dr. Boynton was busy answering questions, for nearly everyone seemed to have something to say.

NEW HAVEN MEETS JOINTLY

With 3 Other Organizations Hears Talk on Electric Furnace Atmospheres

By R. T. Porter

The New Haven chapter was guest of the Connecticut section of the American Institute of Electrical Engineers at the General Electric plant in Bridgeport, on Dec. 15. Other technical societies attending this joint meeting were the American Society for Mechanical Engineers and the Engineers' Club of Bridgeport.

The speaker was C. I. Ipsen, manager of industrial heating department, General Electric Co., Schenectady. The subject was "Application and use of Artificial Atmospheres in Electric Furnaces."

The talk was illustrated with slides and the following topics were discussed: 1. The values of artificial atmospheres; 2. Processes and furnaces which lend themselves to the use of artificial atmospheres; 3. Gases used and the source of supply; 4. Possible future applications.

Approximately 200 men attended.

SSH! MYSTERY EVE IN PHILADELPHIA

Chapter Has Fun As Novel Entertainment is Provided

By Adolph O. Schaefer

By tradition the cares and worries of steel and its heat treatment are cast aside by the Philadelphia chapter for the month of December. The one meeting of the month is held for the avowed purpose of having a good time.

Depression or no depression, the tradition was followed in 1931. Casting about for something different and interesting, the Entertainment Committee hit on the idea of a Mystery Night. The character and whereabouts of the evening were veiled in the deepest secrecy, and the member who purchased a ticket was told only where and when to get on a bus.

The crowd assembled at the Broad Street Station of the Pennsylvania Railroad. Ten large and powerful buses drew up at the appointed hour and took on a puzzled but expectant crew. Dread of raids by the State Police were magnified as the entourage crossed into the forbidden land of New Jersey. Excitement grew as the way led through little used back roads and sparsely settled country.

Tucked away in the heart of the Jersey Pine Belt lies the Log Cabin Lodge of Medford Lakes. There the trail led, and in its spacious interior, warmed by huge log fires in great stone grates, dinner was served. Chicken and soup and everything that goes with them helped appease the appetites raised by the bus ride. The crowd thawed and expanded and mellowed under the combined influence of the food, the beautiful surroundings, and the various forms of music that were offered. Some of the music became impromptu and the fun began.

A truthful secretary cannot record any stirring speeches nor the remarks of any retiring president. Instead twenty beautiful maidens delighted the eye and the ear, and brought peace and relaxation to many a tired business man. Good fellowship prevailed, and the general spirit of congeniality made each performer better than ever, and made the show literally a howling success.

And so back in the buses and back to Philadelphia and home. The 1931 Smoker of the Philadelphia chapter was different and good and a mystery no longer.

VANICK TALKS AT MONTREAL

J. S. Vanick of the International Nickel Co., New York, addressed the members of the Montreal chapter on December 7, on the subject of "Ni-Resist and other Special Alloys." The speaker outlined the history and developments of these special irons, and pointed out their present-day use for a wide variety of purposes.

R. J. Noakes was chairman of the meeting, and F. O. Farey moved the vote of thanks to the speaker.

NOTRE DAME MEETS DEC. 14

By V. Uhlmeyer

The Notre Dame group of the A. S. S. T. held its December meeting on the evening of Dec. 14 in Chemistry Hall.

The speaker of the evening was Prof. Knowles Smith, of the department of mining engineering of the University. The subject was "Glacial Periods," and by tracing the history of the different glaciers and their effect, illustrated by specimens portraying the result, he presented a very interesting lecture.

H. P. TIEMANN, PITTSBURGH, DEAD

Hugh P. Tiemann, assistant metallurgical engineer of Carnegie Steel Co., and a member of the Pittsburgh chapter, died recently from an illness caused by burns received Nov. 28. Mr. Tiemann had been active in Pittsburgh chapter affairs. He was the author of "Iron and Steel" (a pocket encyclopedia of the ferrous metal industry).

C. I. HAYES, INC., NAMES AGENTS

C. I. Hayes, Inc., Providence, R. I., has appointed C. M. Adams and Co., 2970 W. Grand Blvd., Detroit, and L. W. Hayden, 26 So. 15th St., Philadelphia, as distributors for its furnaces in those districts.

CAN YOU ANSWER THESE 15 QUESTIONS?

How can the porosity of chromium plate be minimized? See *Metal Progress*, Jan. 1932, page 82.

How can the Laue method of X-Ray crystal analysis serve a metallurgist in determining whether or not he has properly heat treated the steel under investigation? See *Transactions*, A.S.S.T., Dec. 1931, page 183.

For selective carburizing, what is the desirable thickness of the copper plate? See *National Metals Handbook*, page 209.

What is the tensile strength of an aluminum die casting? See *Metal Progress*, Jan. 1932, page 36.

In cutting steel what property is accountable for the fact that it is easier to keep a sharp cutting edge on a tantalum carbide tool whereas in tungsten carbide tool dulling and seizure sometimes occur? See *Transactions*, A.S.S.T., Jan. 1932, page 238.

How much does a cubic foot of German silver containing copper 60%; zinc 20%, and nickel 20% weigh? See *National Metals Handbook*, page 17.

Has the photo-electric cell found a place in heat treating? See *Metal Progress*, Jan. 1932, page 43.

What is the effect of variation of carbon content in the scaling of steel at forging temperature in a dry air atmosphere? See *Transactions*, A.S.S.T., Jan. 1932, page 206.

What chemical composition is suitable for a high carbon, high chromium shear blade for cold work? See *National Metals Handbook*, page 129.

Is harm done if springs have a thin decarburized surface? See *Metal Progress*, Jan. 1932, page 68.

What is the influence of the finishing slag in the acid open-hearth process on the cleanliness of the steel in the ladle? See *Transactions*, A.S.S.T., Jan. 1932, page 286.

How much does a one inch hexagonal bar of carbon steel weigh per foot? See *National Metals Handbook*, page 10.

How may current, voltage, and speed of arc welding be increased? See *Metal Progress*, Jan. 1932, page 60.

What microstructure in carbon steels is most beneficial to produce the highest wear-resistance? See *Transactions*, Jan. 1932, page 261.

After nitriding a die, how can it be softened to make necessary changes in design? See *National Metals Handbook*, page 109.